Claims 1 and 4-6 remain pending in the present application.

In the Office Action of September 26, 2006, claims 1 and 4-6 were rejected under 35 U.S.C. §102(b) as anticipated by, or in the alternative, as obvious over U.S. Patent No. 4,617,490 to Fitzpatrick et al. Applicants respectfully traverse the rejection.

Claim 1 is directed to a fuel cell engine coolant comprised of an aqueous 1,3-propanediol, which, among other characteristics, has an electrical resistivity of greater than 250 Kohm-cm.

Fitzpatrick discloses a cathode ray tube device with an improved color filtering system comprising cinnamaldehyde or cinnamic alcohol and a solvent comprised of a combination of water and an aliphatic alcohol. The aliphatic alcohol may be 1,3-propanediol. The solvent may be from 20 wt.% to 80 wt.% of the aliphatic alcohol. The improved color filtering system also includes several salts such as a soluble praseodymium salt, a soluble holmium salt, a soluble erbium salt, or a soluble neodymium salt. Fitzpatrick is silent regarding the electrical resistivity of the improved color filtering system.

The Examiner alleges that the fuel cell engine coolant composition as claimed in claim 1 is inherently disclosed by Fitzpatrick. The allegation is incorrect for two reasons. First, the improved color filtering system disclosed by Fitzpatrick does not necessarily include an aqueous 1,3-propanediol, and second, even if the improved color filtering system includes an aqueous 1,3-propanediol, the improved color filtering system does not necessarily have an electrical resistivity of at least 250 Kohm-cm, and, in fact, is very likely not to have such electrical resistivity.

Under the principles of inherency, if the prior art necessarily functions in accordance with, or includes, the claim's limitations, it anticipates. *See* *In re Cruciferous Sprout Litig.*, 301 F.3d 1343, 1349 (Fed.Cir.2002); *MEHL/Biophile Int'l Corp. v. Milgraum*, 192 F.3d 1362, 1365 (Fed.Cir.1999)). The improved color filtering system of Fitzpatrick does not necessarily include the limitations of claim 1 since the improved color filtering system may not include an aqueous 1,3-propanediol. For example, Fitzpatrick teaches that ethylene glycol, 1,2-propanediol, glyercol, ethanol, propanol, isopropanol, and methanol may be used as the aliphatic alcohol component of the water/alcohol solvent in the improved color filtering system. Therefore, the improved

color filtering system does not necessarily include an aqueous 1,3-propanediol, so claim 1 is not inherently disclosed in the Fitzpatrick reference.

Even if the color filtering system of Fitzpatrick did include an aqueous 1,3-propanediol, the improved color filtering system would not necessarily have the electrical resistivity claimed in claim 1 where the fuel cell engine coolant composition has an electrical resistivity of greater than 250 Kohm-cm. First, aqueous 1,3-propanediol does not inherently have an electrical resistivity of greater than 250 Kohm-cm. As shown in the declaration of Mr. Glenn Komplin (attached hereto as Exhibit A), aqueous solutions of 1,3-propanediol and tap water in concentrations of 20 wt. % water: 80 wt. % PDO and 50 wt. % water:50 wt.% PDO do not have an electrical resistivity of greater than 250 Kohm-cm, while aqueous solutions of PDO and deionized water having the same PDO:water concentrations do have an electrical resistivity of greater than 250 Kohm-cm.

Second, even if aqueous solutions of PDO did necessarily have an electrical resistivity of greater than 250 Kohm-cm, the improved color filtering system disclosed by Fitzpatrick would not necessarily have an electrical resistivity of greater than 250 Kohm-cm because the system includes several salts that increase the conductivity of the system. The Examiner contends that because the system includes aqueous PDO, and since aqueous PDO allegedly inherently has an electrical resistivity of greater than 250 Kohm-cm, that the claimed composition is inherently disclosed by the system of Fitzpatrick because the claimed composition is open to additional components not required by the claims. It is true that the claimed composition is phrased as an open-ended claim and may include additional components. However, a composition including additional components that alter the composition relative to the claimed composition such that the altered composition does not read on one or more of the claim limitations is not included within the scope of the claim and does not read on or anticipate the claim. Addition of the color filtering salts in the system of Fitzpatrick increases the conductivity of the system such that the system does not have a resistivity of greater than 250 Kohm-cm, and the system does not anticipate claim 1 regardless of the resistivity of the individual components of the system.

Claim 1 and its dependent claims 4-6, therefore, are not anticipated by the disclosure of Fitzpatrick.

Furthermore, the composition of claim 1 is not obvious from the disclosure of Fitzpatrick. The coolant as claimed in claim 1 is not obvious from the light filtering solutions disclosed by the Fitzpatrick reference due to the high resistivity of at least 250 Kohm-cm required for the claimed coolant. High resistivity is particularly useful in coolants used in fuel cell engines since fuel cell engines generate significant electrical potential, and the coolant flowing around the aluminum components of the fuel cell must be non-conductive (e.g. highly resistive) to prevent the fuel cell from shorting out. One skilled in the art would not consider the salt containing solutions disclosed by the reference for use as a coolant requiring an electrical resistivity of at least 250 Kohm-cm due to the ionic, and therefore conductive, nature of the salt containing solutions. Claims 4-6 depend from claim 1 and are not obvious from Fitzpatrick for the reason claim 1 is not obvious from Fitzpatrick.

In the Office Action of September 26, 2006, claims 1 and 4-6 were rejected under 35 U.S.C. §102(b) as anticipated by, or in the alternative, as obvious over U.S. Patent No. 4,925,603 to Nambu. Applicants respectfully traverse the rejection.

Nambu provides a gel cooling medium comprising an aqueous solution of polyvinyl alcohol and a water soluble organic compound or freezing point depression agent such as 1,3-propylene glycol (PDO) in an amount from 20 % to 80 % by weight.

The Examiner alleges that the fuel cell engine coolant composition as claimed in claim 1 is inherently disclosed by Nambu. The allegation is incorrect for two reasons. First, the gel cooling medium disclosed by Nambu does not necessarily include an aqueous 1,3-propanediol (PDO), and second, even if the gel cooling medium includes an aqueous PDO, the improved color filtering system does not necessarily have an electrical resistivity of at least 250 Kohm-cm.

Again, under the principles of inherency, if the prior art necessarily functions in accordance with, or includes, the claim's limitations, it anticipates. *See* *In re Cruciferous Sprout Litig.*, 301 F.3d 1343, 1349 (Fed.Cir.2002); *MEHL/Biophile Int'l Corp. v. Milgraum*, 192 F.3d 1362, 1365 (Fed.Cir.1999)). The gel cooling medium of Nambu does not necessarily include the limitations of claim 1 since the gel cooling medium may not include an aqueous PDO. For example, Nambu teaches that ethylene glycol, propylene glycol, glycerin, and 2-methyl-2,4-pentanediol may alternatively be used as

freezing prevention agents in the gel cooling medium. Therefore, the gel cooling medium does not necessarily include an aqueous PDO so claim 1 is not inherently disclosed in the Nambu reference.

Even if the gel cooling medium of Nambu did include an aqueous PDO, the gel cooling medium would not necessarily include the electrical resistivity limitation of claim 1 where the fuel cell engine coolant composition has an electrical resistivity of greater than 250 Kohm-cm. As discussed above and as shown in the Declaration of Mr. Glenn Komplin (Exhibit A), aqueous PDO does not inherently have an electrical resistivity of greater than 250 Kohm-cm.

Furthermore, the gel cooling medium of Nambu does not inherently have a viscosity of at most 6 cPs at 0°C as claimed in claim 1 since the gel cooling medium of Nambu is disclosed to be a gel at ambient temperatures and below. The Examiner asserts that, although Nambu is silent with respect to viscosity, because the gel cooling medium includes aqueous PDO, and since aqueous PDO allegedly inherently has a viscosity of at most 6 cPs at 0°C, that the claimed composition is inherently disclosed by the gel cooling medium of Nambu because the claimed composition is open to additional components not required by the claims. It is true that the claimed composition is phrased as an open-ended claim and may include additional components. However, as noted above, a composition including additional components that alter the composition relative to the claimed composition such that the altered composition does not read on one or more of the claim limitations is not included within the scope of the claim and does not read on or anticipate the claim. Addition of the polyvinyl alcohol in the gel cooling medium of Nambu increases the viscosity of the gel cooling medium greatly relative to aqueous PDO such that the gel cooling medium is a gel at ambient temperatures and does not have a viscosity of at most 6 cPs at 0°C. The gel cooling medium does not anticipate claim 1 regardless of the viscosity of the individual components of the gel cooling medium since the viscosity of the gel cooling medium itself falls outside the scope of claim 1.

Other than asserting that the gel cooling medium of Nambu inherently includes the limitations of claim 1 since the gel cooling medium may include an aqueous PDO, the Examiner has provided no proof that the gel cooling medium indeed does have an electrical resistivity of greater than 250 Kohm-cm or a viscosity of at most 6 cPs at 0°C.

In relying upon the theory of inherecy, the Examiner must provide a basis in fact and/or technical reasoning to reasonably support the determination that the allegedly inherent characteristic necessarily flows from the teachings of the applied art. *Ex parte Levy*, 17 USPQ2d 1461, 1464 (Bd. Pat. App. & Inter. 1990). As shown, aqueous PDO does not necessarily have an electrical resistivity of greater than 250 Kohm-cm, and even if it did, the Examiner has provided no reasonable proof that the gel cooling medium disclosed by Nambu, even including aqueous PDO, has an electrical resistivity greater than 250 Kohm-cm. Further, the Examiner has provided no reasonable proof that the gel cooling medium has a viscosity of at most 6 cPs at 0°C—arguing that one of the components has a certain viscosity does not prove that the complete composition has the same viscosity (e.g. hot water has a much lower viscosity than the combination of hot water and starch, and it is illogical to argue that the combination must have the viscosity of hot water because hot water is a component of the combination).

Claim 1 and its dependent claims 4-6, therefore, are not anticipated by the disclosure of Nambu.

Furthermore, the composition of claim 1 is not obvious from the disclosure of Nambu. As discussed above with respect to Fitzpatrick, the composition of claim 1 provides a coolant having a high resistivity that is useful in applications requiring a coolant resistant to conducting electricity such as fuel cell engines. Claim 1 is not obvious from the gel cooling medium of Nambu since Nambu does not disclose that the gel cooling medium has high electrical resistivity. Further, the composition of claim 1 is not obvious from Nambu since one skilled in the art would not use a gel as a low-viscosity coolant effective at low temperatures since the gel would not flow at cold temperatures.

In the Office Action of September 26, 2006, claims 1 and 4-6 were provisionally rejected on the grounds of non-statutory double patenting over claims of pending Application No. 10/886,298. Applicants respectfully traverse the rejection.

As noted in Applicants' last response, the Applicants are not the owner of Application No. 10/886,298, which is assigned to Dupont-Staley BioProducts (now DuPont Tate & Lyle BioProducts, LLC), although the applications have a common inventor. As stated in the MPEP §804(I)(1): "[I]f a "provisional" nonstatutory

obviousness-type double patenting (ODP) rejection is the only rejection remaining in the earlier-filed of the two pending applications, while the later-filed application is rejectable on other grounds, the examiner should withdraw that rejection and permit the earlier-filed application to issue as a patent without a terminal disclaimer. If the "provisional" ODP rejections in two applications are the only rejections remaining in those applications, the examiner should withdraw the ODP rejection in the earlier-filed application thereby permitting that application to issue without need of a terminal disclaimer."

The present application was filed on February 13, 2002, while Application No. 10/886,298 was filed on July 6, 2004 and claimed priority from Provisional Application No. 60/485,441 filed July 7, 2003. The present application is, therefore, the earlier-filed of the two pending applications, including the provisional application from which Application No. 10/886,298 claims priority. As shown above, the remaining rejections under 35 USC §§ 102 and 103 have been obviated and no longer apply, therefore, Applicants allege that the only remaining rejection is the double patenting rejection. As such, as stated in the MPEP, that rejection must now be withdrawn since the present application is the earlier-filed of the two patent applications.

In light of all the above, Applicants respectfully request allowance of the remaining pending claims 1 and 4-6.

Respectfully submitted,

EDWARD R. EATON,
WYNDHAM H. BOON
and CHRISTOPHER J. SMITH

By: _____
Richard B.Taylor Reg. No. 37,248
P.O. Box 2463
Houston, TX 77252-2463
(713) 241-3558